

REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested in view of the foregoing amendments and discussion presented herein.

1. **Rejection of Claims 1-4, 6-8, 10-11, and 13 under 35 U.S.C. § 102(b).**

The aforementioned claims were rejected under 35 U.S.C. § 102(b) as being anticipated by Pareja ('556). The Examiner contends that,

"Pareja ('556) discloses a valve body (11) made up of a first member part (25) and a two lower parts (36 and 37). The three parts are threaded (ex. at 28), indicating rotatable means for adjusting the bias on a spring (17) and inner tube member (26), with the first member (25) being perceived as being "in" the valve body. The valve body also has an intake port (13), a central channel (53), an output port (14); a valve seat (18) disposed within the central channel, and a biased valve head (16). Further, the valve head is configured to engage the valve seat when the pressure of the flow of fluid drops to a level insufficient to overcome the bias on the valve head."

In response to the rejection, Applicant has carefully considered the reference and basis of the Examiner's rejection and has cancelled claim 1 and amended claim 2 to form an independent claim. Applicant has also amended independent claims 6, 10, and 13. These amendments are made to recite the subject matter of those claims more particularly, and are made without prejudice or disclaimer.

(a) **Claim 2.** Applicant has amended claim 2 to recite, in part, "said valve head having a cylindrical body and a generally rounded contact surface, and, where said valve seat has a seat surface adapted to mate with said rounded contact surface of said valve head."

Applicant's invention is for controlling the flow of paint in high pressure spray apparatus whereas Pareja is a relief or bypass valve for controlling pressure in a car wash plumbing system when the dispensing nozzle is turned off. Bypass is used to mitigate water hammer and keep fluid flowing through the pump to reduce overheating and bearing failure. The car wash requirement in Pareja occurs at relatively higher flows and lower pressures than applicant's invention. Applicant initially tried devices

such as disclosed in Pareja for paint spraying and found them unsuitable. In particular, the ball valve 16 would rotate during use and quickly develop erosion deformities and scoring on the surface from the pressurized particle laden paint. The unmodified valve seat 18 in Pareja is also subject to erosion when applied under Applicant's conditions.

In Applicant's invention, "Valve seat 74 preferably has a seat face 80 that has the same dimensions as the engaging surface of the valve head 82 so that a seal is created and the movement of fluid in inlet port 56 in either direction is stopped." [0068] Pareja is silent as to the need for a mating seat face. In Applicant's invention, "Valve head 82 preferably has a cylindrical body 76 ..." and, "Spring 90 and valve head 82 can fit within the center of retainer 72 so that valve head 82 can seat against face 80 of seat 74 during use." [0068] The cylindrical valve head 76 with a rounded head surface 82 as shown in FIG. 5A makes full contact with seat face 80 in valve seat 74. The non-rotating valve head and close mating surfaces in Applicant's invention are important features not disclosed in Pareja. Additionally, Pareja discloses the limitation of metering orifices in the ball cage in FIG. 3 that are not present in applicant's invention.

Therefore, the Applicant respectfully submits that claim 2, as amended, as well as the claims which depend therefrom, now recite one or more elements not taught in the cited reference and is therefore not anticipated by the reference.

Further, Applicant submits that it would not be obvious to modify Pareja's ball relief valve to arrive at Applicant's invention having a cylindrical valve head with a rounded valve head surface and mating valve seat face.

(b) Claim 6. This claim has been amended to recite, in part, the limitations discussed for claim 2 above and the further limitation of, "a chamber with a recess disposed in said central channel" and, "wherein said valve seat has a top surface and a bottom surface; wherein said top surface of said valve seat has a flange adapted to fit in said recess of said chamber." Additionally, a separate retainer to retain the removable valve seat in the valve body is recited.

In Applicant's invention, "Referring also to FIG. 6 and FIG. 7, in the embodiment

shown valve seat 74 is provided with a flange that fits within a milled section at the center of the inlet body 70 such that bore 78 at the center of valve seat 74 is aligned with inlet port 56." [0068] The alignment of the seat bore and inlet port with a removable valve seat is important in this application and has benefits in controlling the high pressure flow. This feature is not addressed in Pareja.

Applicant respectfully submits that claim 6, as amended, as well as the claims which depend therefrom, now recite one or more elements not taught in the cited reference and is therefore not anticipated by the reference. Further, Applicant submits that it would not be obvious to modify Pareja's ball relief valve to arrive at Applicant's invention having a removable valve seat with a flange to align the inlet port and valve seat bore.

(c) Claim 10. This claim has been amended to recite, in part, the limitations discussed for claim 2 above and the further limitation of the bore diameter in the valve seat being smaller than the diameter of the outlet port. Support for this subject matter is shown in FIG. 6. Further, Applicant states, "the diameter of inlet port 50 and output port 56 can be different depending on the desired volume of fluid flow and threshold fluid pressures." [0074] Applicant has found that in some embodiments, this feature provides benefits for stopping flow of high pressure paint quicker and for eliminating back pressure during operation. Pareja is silent as to the relationship of diameter of valve seat to outlet port. Applicant respectfully submits that claim 10, as amended, as well as the claims which depend therefrom, now recite one or more elements not taught in the cited reference and is therefore not anticipated by the reference.

Further, Applicant submits that it would not be obvious to modify Pareja's ball relief valve to arrive at Applicant's invention having the bore in the valve seat a smaller diameter than the outlet port.

(d) Claim 13. This claim has been amended to recite, in part, the limitations discussed for claims 2, 6, and 10 described above. Applicant respectfully submits that claim 13, as amended, as well as the claims which depend therefrom, now recite one or

more elements not taught in the cited reference and is therefore not anticipated by the Pareja.

(e). Applicant believes that dependent claims 3-4, 7-8, and 11, which depend from the amended independent claims discussed above, are in condition for allowance because their parent claims are believed to be allowable.

2. Rejection of Claims 5, 9, 12, 14, and 15 under 35 U.S.C. § 103(a).

The aforementioned claims were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pareja ('556) in view of Behr ('878). Examiner contends that it would be obvious to one skilled in the art to modify the bypass relief valve of Pareja with the paint spray nozzle having a radially inward valve needle of Behr to arrive at Applicant's invention.

(a) Claim 5. This claim has been amended to reflect the cancellation of claim 1. Applicant believes that claims 2, 3, and 4, from which claim 5 depends, are in condition for allowance based on the amendments to claim 2 as described in 1(a) above. Therefore, claim 5, which depends from independent claim 2, and its dependents, should, *a fortiori*, be in condition for allowance.

(b) Claim 9. This claim depends from independent claim 6. Claim 6 has been amended to be in condition for allowance as described in 1(b) above. Therefore, claim 9, which depends from independent claim 6, and its dependents, should, *a fortiori*, be in condition for allowance.

(c) Claim 12. This claim depends from independent claim 10. Claim 10 has been amended to be in condition for allowance as described in 1(c) above. Therefore, claim 12, which depends from independent claim 10, and its dependents, should, *a fortiori*, be in condition for allowance.

(d) Claim 14. This claim depends from independent claim 13. Claim 13 has been amended to be in condition for allowance as described in 1(d) above. Therefore, claim 14, which depends from independent claim 13, and its dependents, should, *a fortiori*, be in condition for allowance.

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(e) Claim 15. This claim has been amended to recite, in part, the limitations discussed for claims 2, 6, and 13 described above and the additional limitation of the valve body comprising two members. Applicant respectfully submits that claim 15, as amended, as well as the claims which depend therefrom, now recite one or more elements not taught in the cited references and is therefore not obvious over Pareja in view of Behr.

3. New Claim 16.

New claim 16 depends from amended claim 15 and recites additional subject matter from claim 10, "wherein the diameter of said bore in said valve seat is smaller than said output port." Support for claim 16 is found in paragraph [0074] and FIG. 6. Applicant respectfully submits that claim 16 recites patentable subject matter as a dependent claim on claim 15 and is believed to be in condition for allowance.

4. Amendments Made Without Prejudice or Estoppel.

Notwithstanding the amendments made and accompanying remarks provided above, Applicants have made these amendments in order expedite allowance of the currently pending subject matter. However, Applicants do not acquiesce in the original ground for rejection with respect to the original form of these claims. These amendments have been made without any prejudice, waiver, or estoppel, and without forfeiture or dedication to the public, with respect to the original subject matter of the claims as originally filed or in their form immediately preceding these amendments. Applicants reserve the right to pursue the original scope of these claims in the future, such as through continuation practice, for example.

5. Conclusion.

Based on the foregoing, Applicants respectfully request that the various grounds for rejection in the Office Action be reconsidered and withdrawn with respect to the presently amended form of the claims, and that a Notice of Allowance be issued for the present application to pass to issuance.

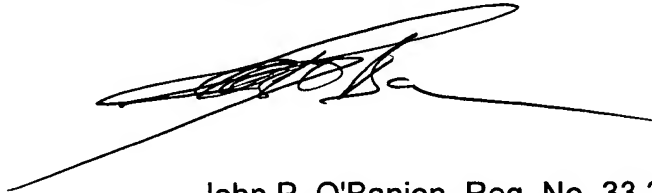
In the event any further matters remain at issue with respect to the present

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application, Applicants respectfully request that the Examiner please contact the undersigned below at the telephone number indicated in order to discuss such matter prior to the next action on the merits of this application.

Date: 10/28/05

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'John P. O'Banion', with a long horizontal line extending to the right.

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